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THE CLAIMS

1. (Previously presented) An optical device comprising a plurality of layers, the optical device comprising:

an optical fiber having a substantially axial symmetry, the optical fiber comprising a transparent envelope surrounding a core doped with phosphorescent or fluorescent material, said transparent envelope comprising a cladding layer; and

a light source comprising an inner electrode layer, a reflective outer electrode layer, and an active area layer located between said inner electrode and said outer electrode, wherein said light source and said optical fiber are integrated, and wherein said light source has an axial symmetry and is positioned coaxially with respect to the axis of said optical fiber, and wherein said inner electrode comprises a transparent material to permit light generated in said active area to propagate outside said light source and into said optical fiber,

wherein at least one of the layers has imperfections.

2. (Original) The device according to Claim 1, wherein the envelope further comprises a jacket layer surrounding said cladding layer

3. (Canceled)

4. (Original) The device according to Claim 1, wherein said light-source is flexible.

5. (Original) The device according to Claim 1, wherein said light-source comprises a mono- or multi-layer organic light-emitting diode (OLED).

6. (Canceled)

7. (Previously presented) The device according to Claim 1, further comprising at least one mirror on each side of an optically pumped region of the optical fiber, wherein one mirror is substantially opaque and the another mirror is at least partially transparent.

8. (Original) The device according to Claim 1, wherein the efficiency of absorption of light in said core, said light produced by said light source, is a function of Pe/Pc.

9. (Previously presented) The device according to claim 1, wherein the efficiency is controlled by choosing a desirable ratio of Pe/Pc.

10. (Original) The device according to Claim 1, wherein the device is configured to generate optical signals.

11. (Previously presented) The device according to Claim 10, wherein said optical signal is substantially constant.

12. (Original) The device according to Claim 1, wherein the device is configured to amplify or repeat optical signals.

13. (Previously presented) The device according to Claim 7, wherein said device is configured as a laser generator.

14. (Original) The device according to Claim 1, wherein said device is configured for introspection.

15. (Previously presented) The device according to Claim 1, wherein said device is configured for endoscopy.

16. (Previously presented) A method of making an optical device, the method comprising:

forming an optical fiber having an axial symmetry;

surrounding a fiber core of the optical fiber with a transparent envelope, the fiber core being doped with phosphorescent or fluorescent material, wherein said transparent envelope comprises a cladding layer;

integrating a light source with the optical fiber, the light source comprising an inner electrode layer, a reflective outer electrode layer, and an active area layer located between said inner electrode and said outer electrode; and

positioning the light source coaxially with respect to the axis of said optical fiber, wherein said inner electrode comprises a transparent material to permit light generated in said active area to propagate outside said light source and into said optical fiber,

wherein at least one of the layers has imperfections.

17. (Original) The method according to Claim 16, further comprising surrounding said cladding layer with a jacket layer.

18. (Canceled)

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19. (Original) The method according to Claim 16, wherein said light-source is flexible.

20. (Original) The method according to Claim 16, wherein said light-source comprises a mono- or multi-layer organic light-emitting diode (OLED).

21. (Canceled)

22. (Previously presented) The method according to Claim 16, further comprising positioning at least one mirror on each side of an optically pumped region of the optical fiber, wherein one mirror is substantially opaque and the another mirror is at least partially transparent.

23. (Previously presented) The method according to Claim 16, further comprising generating optical signals from the light source.

24. Previously presented) The method according to Claim 16, further comprising generating substantially constant optical signals from the light source.

25. (Original) The method according to Claim 16, further comprising performing at least one of amplification and repeating of optical signals.

26. (Previously presented) The method according to Claim 16, further comprising generating a laser light signal through the optical fiber.

27. (Previously presented) The device according to Claim 1, wherein said imperfections are created by roughening said layer.

28. (Previously presented) A method of making an optical device, the method comprising:

forming an optical fiber having an axial symmetry;

surrounding a fiber core of the optical fiber with a transparent envelope, the fiber core being doped with phosphorescent or fluorescent material, wherein said transparent envelope comprises a cladding layer;

integrating a light source with the optical fiber, the light source comprising an inner electrode layer, a transparent outer electrode layer, an active area layer located between said inner electrode and said outer electrode, and a reflective layer on top of said outer electrode; and

positioning the light source coaxially with respect to the axis of said optical fiber, wherein said inner electrode comprises a transparent material to permit light generated in said active area to propagate outside said light source and into said optical fiber,

wherein at least one of the layers has imperfections.

29. (Previously presented) The method according to Claim 28, further comprising surrounding said cladding layer with a jacket layer.

30. (Previously presented) The method according to Claim 28, wherein said light-source is flexible.

31. (Previously presented) The method according to Claim 28, wherein said light-source comprises a mono- or multi-layer organic light-emitting diode (OLED).

32. (Previously presented) The method according to Claim 28, further comprising positioning at least one mirror on each side of an optically pumped region of the optical fiber, wherein one mirror is substantially opaque and the another mirror is at least partially transparent.

33. (Previously presented) The method according to Claim 28, further comprising generating optical signals from the light source.

34. (Previously presented) The method according to Claim 28, further comprising generating substantially constant optical signals from the light source.

35. (Previously presented) The method according to Claim 28, further comprising performing at least one of amplification and repeating of optical signals.

36. (Previously presented) The method according to Claim 28, further comprising generating a laser light signal through the optical fiber.

37. (Previously presented) An optical device comprising a plurality of layers, the optical device comprising:

an optical fiber having a substantially axial symmetry, the optical fiber comprising a transparent envelope surrounding a core doped with phosphorescent or fluorescent material, said transparent envelope comprising a cladding layer; and

a light source comprising an inner electrode layer, a transparent outer electrode layer, an active area layer located between said inner electrode and said outer electrode, and a reflective layer on top of said outer electrode, wherein said light source and said

optical fiber are integrated, and wherein said light source has an axial symmetry and is positioned coaxially with respect to the axis of said optical fiber, and wherein said inner electrode comprises a transparent material to permit light generated in said active area to propagate outside said light source and into said optical fiber,

wherein at least one of the layers has imperfections.

38. (Previously presented) The device according to Claim 37, wherein the envelope further comprises a jacket layer surrounding said cladding layer

39. (Previously presented) The device according to Claim 37, wherein said light-source is flexible.

40. (Previously presented) The device according to Claim 37, wherein said light-source comprises a mono- or multi-layer organic light-emitting diode (OLED).

41. (Previously presented) The device according to Claim 37, further comprising at least one mirror on each side of an optically pumped region of the optical fiber, wherein one mirror is substantially opaque and the another mirror is at least partially transparent.

42. (Previously presented) The device according to Claim 37, wherein the efficiency of absorption of light in said core, said light produced by said light source, is a function of Pe/Pc.

43. (Previously presented) The device according to claim 37, wherein the efficiency is controlled by choosing a desirable ratio of Pe/Pc.

44. (Previously presented) The device according to Claim 37, wherein the device is configured to generate optical signals.

45. (Previously presented) The device according to Claim 44, wherein said optical signal is substantially constant.

46. (Previously presented) The device according to Claim 37, wherein the device is configured to amplify or repeat optical signals.

47. (Previously presented) The device according to Claim 41, wherein said device is configured as a laser generator.

48. (Previously presented) The device according to Claim 37, wherein said device is configured for introspection.

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49. (Previously presented) The device according to Claim 37, wherein said device is configured for endoscopy.

50. (Previously presented) The device according to Claim 37, wherein said imperfections are created by roughening said layer.

51. (Previously presented) The method according to Claim 16, further comprising roughening at least one of the layers to obtain said imperfections.

52. (Previously presented) The method according to Claim 28, further comprising roughening at least one of the layers to obtain said imperfections.